



# **Conceptual Interim Approaches for Evaluating GHG Emissions from Power Plants**

## **Siting Committee Workshop**

Sacramento, California

November 19, 2008

Matthew Layton

[m Layton@energy.state.ca.us](mailto:m Layton@energy.state.ca.us) / 916-654-3868

Dave Vidaver

[dvidaver@energy.state.ca.us](mailto:dvidaver@energy.state.ca.us) / 916-654-4656

**California Energy Commission**

[www.energy.ca.gov](http://www.energy.ca.gov)



# Purpose

Discuss interim environmental review approaches for Greenhouse Gas emissions and impacts in Energy Commission power plant licensing proceedings.

- Consider four proposals.
- Identify key issues for resolution.
- Provide comments for the record.



# Caveats

- Range of options designed to be descriptive of the factors that might be considered.
- Mitigation, fees and offsets are used interchangeably.
- Concept options are neither comprehensive nor exclusive.
- Proposed threshold values are for illustrative purposes only.



# For Later Discussion

- Should mitigation liability be based on permitted or actual GHG emissions?
- Should the retirement of an existing facility result in a “netting out” of emissions liability? If so, how should this be calculated?
- Should construction emissions be held significant even if best practices are followed? If so, over what time period should mitigation be amortized?



## For Later Discussion

- How should the Energy Commission's CEQA mitigation for power plant GHG emissions work in concert with developing federal, state and local GHG rules and programs?
- If required to mitigate GHG emissions, how would the mitigation or fee amount (\$/metric tonne) be derived?



# 1. Zero Threshold - Mitigation for All Projects

- Mitigation required for emissions over zero threshold emitted during plant construction and operation.
- Would be applied to all power plants; does not differentiate by technology, dispatchability, or location.



## 2. System Threshold – Mitigation for Some Projects

- *Efficient* power plant/system threshold: <0.400 mt/MWh, or <7,577 Btu/kWh, staff's estimate of the 2004 system heat rate.
- Emissions from *efficient* power plants would not require mitigation.
- Mitigation required for emissions over threshold.



### 3. System/LRA Threshold – Mitigation Based on LRA

- For power plants with reliability contracts in ISO-designated local reliability areas (LRA):
  - Emissions below efficiency/system threshold would not require mitigation.
  - Emissions above efficiency/system threshold would require mitigation for emissions above threshold (Concept 2.).
- For power plants located outside an ISO-designated LRA:
  - All power plants would be required to provide mitigation for emissions above zero threshold (Concept 1.).





## 4. “Best Available Control Technology” Mitigation by Technology

- Certain technologies would be considered to provide a net benefit for GHG emissions in CA or across the WECC:
  - Peakers  $\leq 9,500$  Btu/kWh and permitted  $\leq 2,000$  hours.
  - CTCCs  $\leq 7,200$  Btu/kWh and permitted  $\geq 7,000$  hours.
  - Cogeneration meeting efficiency and useful thermal thresholds.
  - Solar thermal with  $\leq 25\%$  of gross input from fossil fuels.
- BACT plants: mitigation not required.
- Non-BACT plants: mitigation tied to technology.



# Discussion and Comments

## **Greenhouse Gas Emission Impacts of Power Plants Docket #08-GHG OII-01**

[http://www.energy.ca.gov/ghg\\_powerplants/documents/index.html](http://www.energy.ca.gov/ghg_powerplants/documents/index.html)